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4 June 2003,

RAM-D CPSP

Tri-Service

Cost Engineering Workshop and Conference

Virginia Beach, June 2003

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WALLA WALLA DISTRICT

COST ENGINEERING FOR CIVIL WORKS AND INTERAGENCY AND INTERNATIONAL SUPPORT

DIRECT[illegible]ERTISE

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Presentation Outline

Introduction

CPSP PM

RAM-D^{sm}

35% Cost Estimates

HQ Cost Review

95% Cost Estimates

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Terms

- **RAM-D℠**
  Risk Assessment Methodology for Dams

- **CPSP**
  Critical Project Security Program

- **CECW-HS**
  Corps Civil Works – Homeland Security

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Civil Works

Critical Project Security Program

is to be implemented across USACE

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CPSP Project Management Plan

- **Reporting requirements are specified**
  - **Ensure Consistency**
  - **Uniformity**
  - **Standardization in the program**

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CPSP – PM Goals

- Complete
  - Design
  - Aquisition and
  - Construction of physical security enhancement measures by

December 31, 2003

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Roles & Responsibilities - Cost Estimating Lead

- Provides policy level guidance on design and construction cost estimates (MCACES)
  - to ensure consistent application of
    - cost estimating procedures,
    - critical analysis and
    - civil works construction costs.

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Cost Estimates

- How many Cost Estimates?
- RAM-D Cost Estimate Initial Concept
- 35% Cost Estimate
- 95% Cost Estimate

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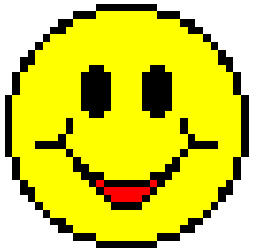
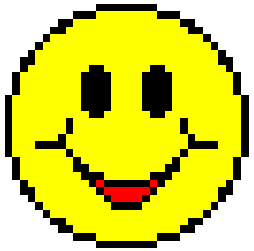
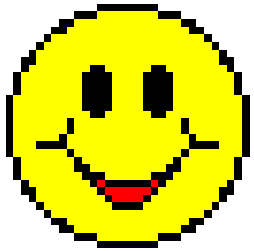
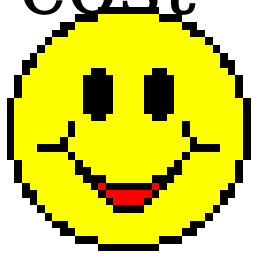
District Responsibility



Each District is responsible for preparing cost estimates and for overall total project cost







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Independent Technical Reviews

- ITR's must be performed for all CPSP Projects
- ITR's will be conducted at the 35% and 95% design phases

  – Comply with
    - USACE Standards,
    - Criteria, and
    - Cost Estimating Requirements

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Program Approval Matrix

Project Phase	Required Authorized Approval
RAM-D Assessment	RAM-D Assessment Review Board
Kick Off Meeting	PgMT
35% Design	ITR
95% ITR	

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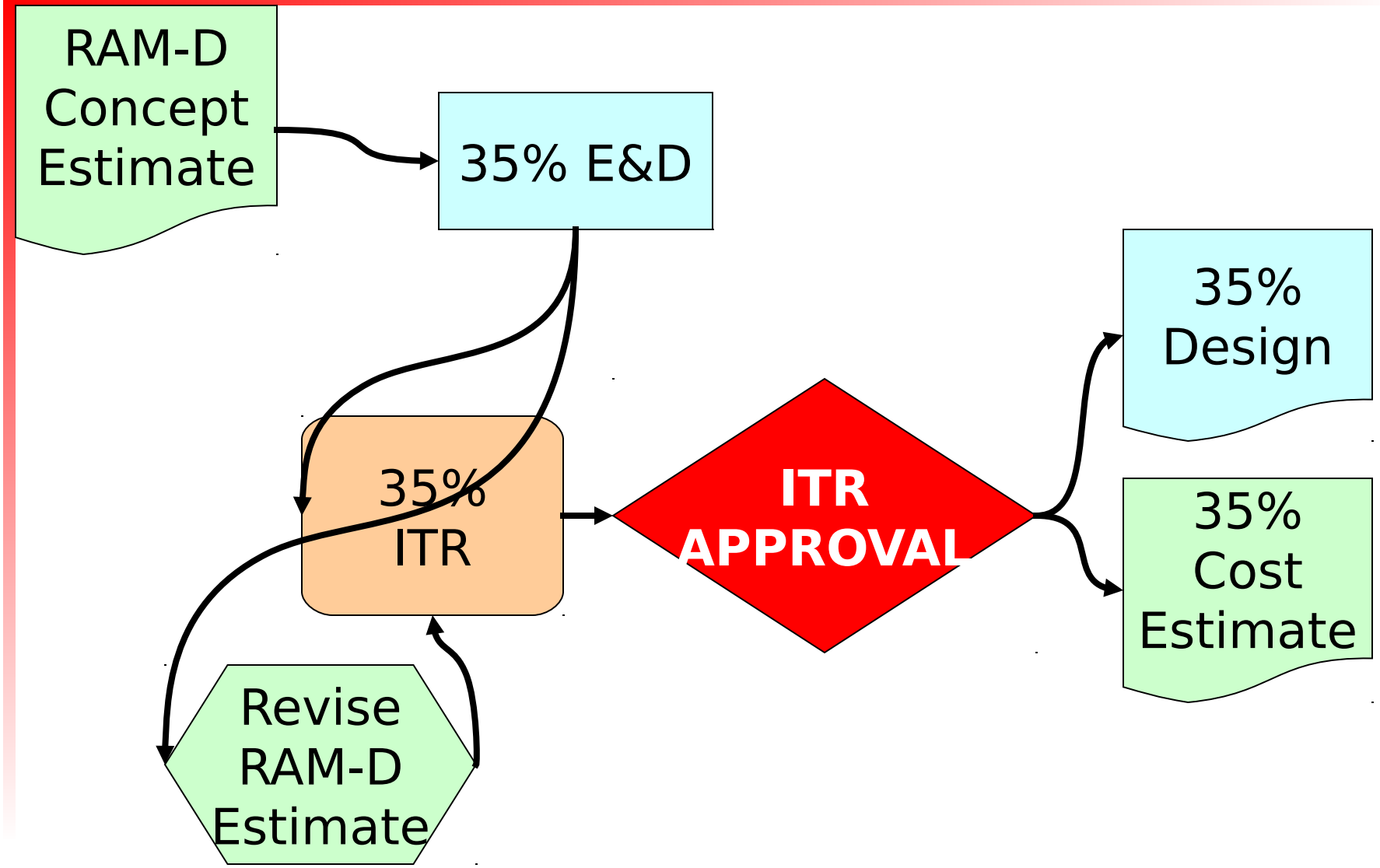
Process



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Presentation Outline

- Introduction
- CPSP PM
- RAM-D^{sm}
- 35% Cost Estimates
- HQ Cost Review
- 95% Cost Estimates

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RAM-D^{sm}

- Risk Assessment Methodology for Dams

(Likelihood of Attack)

x (Consequence) ↓

x (1-System Effectiveness ↑

= Risk

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RAM-D^{sm}

Evaluate Existing Conditions/System

= Risk (0 to 1)

Physical Improvements
Reduce Consequences
Improve Effectiveness

Re-Evaluate Improved System

= Risk (0 to 1)

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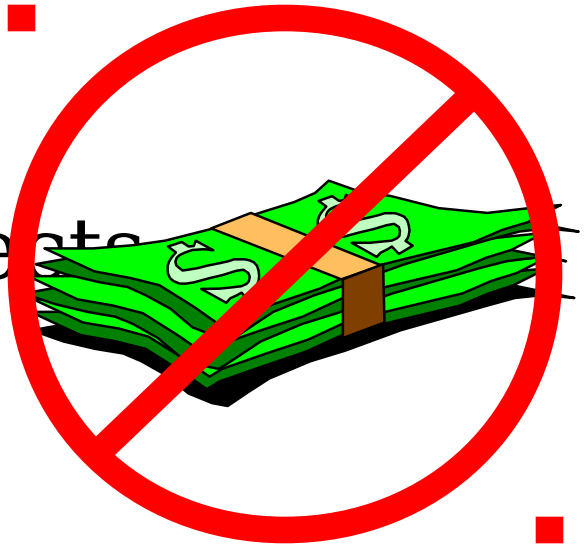
RAM-D^{sm} Critical Projects

- Prioritize Corps Dams
- Determine Critical Projects
- Rank Critical Projects



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RAM-D^{sm} Estimate

- Detect
- Assess
- Delay
- Response

SYSTEM COMPONENTS

PHYSICAL IMPROVEMENTS
TO REDUCE THE SECURITY RISK

BASELINE
FOR CONTAISSANCE

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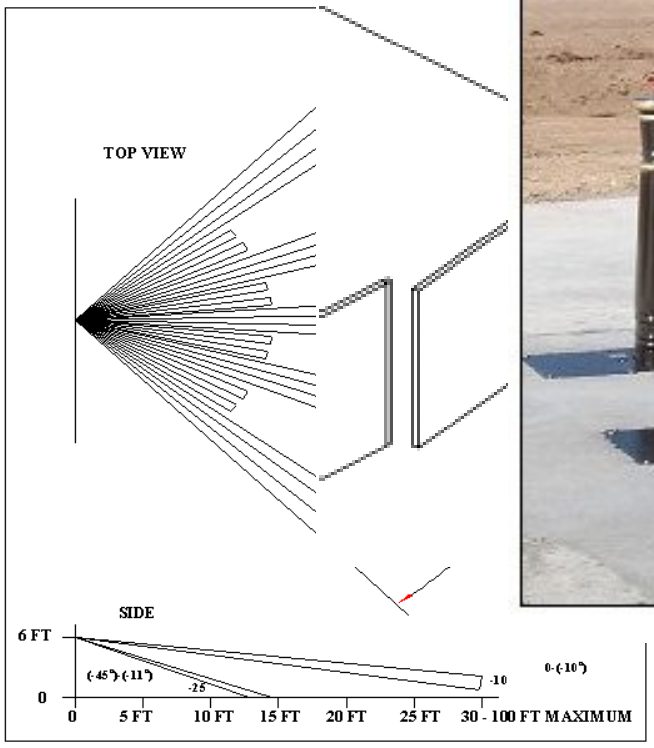
Security System Improvements

BALANCED MAGNETIC SWITCH

ENTER

PASSIVE INFRARED SENSOR



THE NUMBER, RANGE, AND PROJECTION ANGLES OF THE DETECTION BEAMS VARY DEPENDING UPON DESIGN.

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RAM-D^{sm}

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Cost Issues > Design Activities

- Project Authorizations
- Project Cost Allocations
- Funding Sources

Organization of Work

Contracting Methods

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FEATURE & FUNDING

- NAVIGATION
- RECREATION

CONGRESS

- HYDROPOWER

REIMBURSABLE

- PROJECT JOINT FACILITIES

PROJECT ALLOCATION

O&M Codes vs. Civil Works WBS

O&M WORK CATEGORY CODES

		CIVIL WORKS WBS
61190	NAVIGATION	05
61590	RECREATION	14
61390	HYDROPOWER	07
61490	PROJECT JOINT COSTS	
	DAM	04
	BUILDINGS GROUNDS & UTILITIES	19

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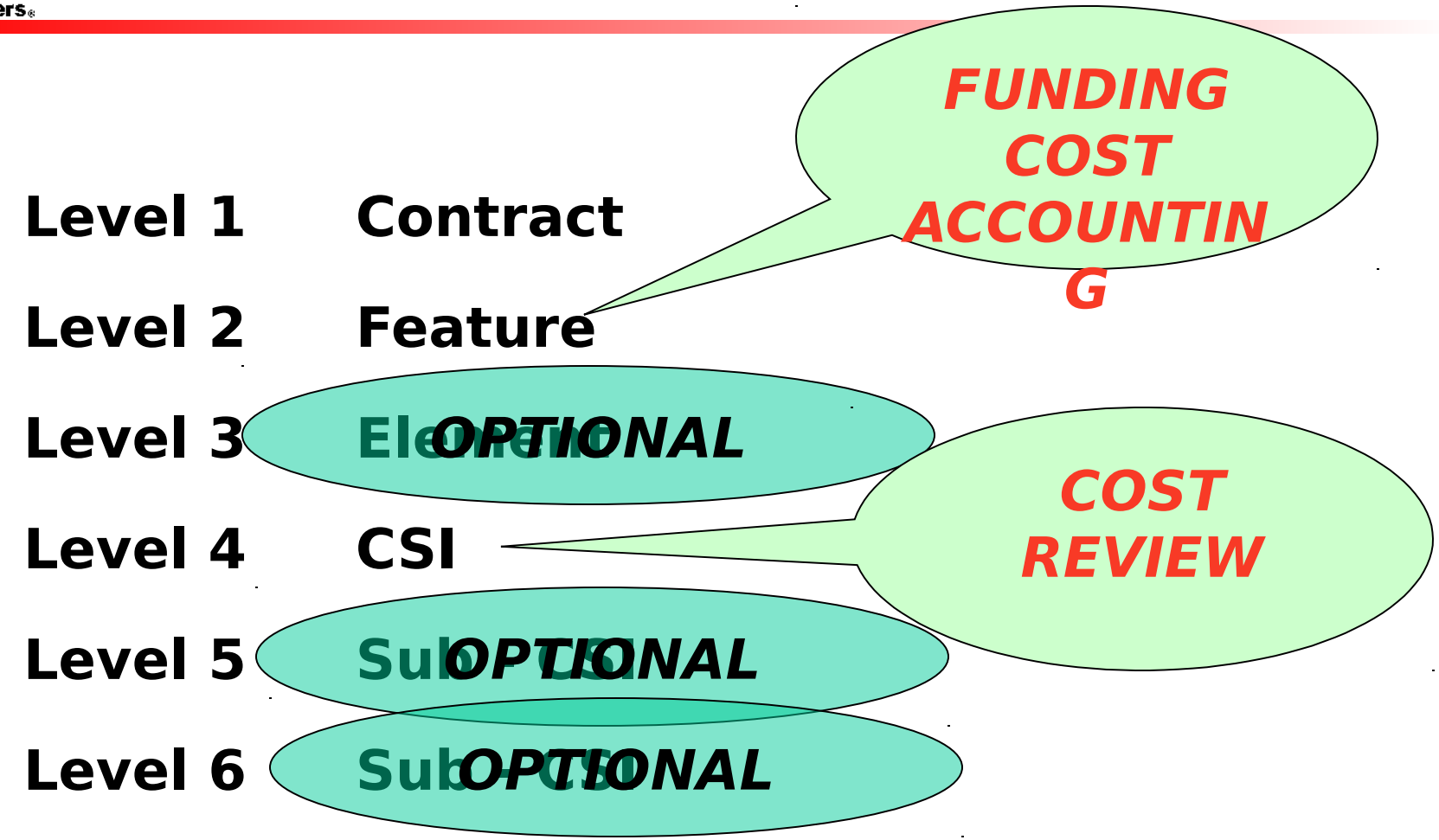
MCACES WBS



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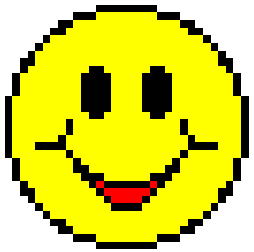
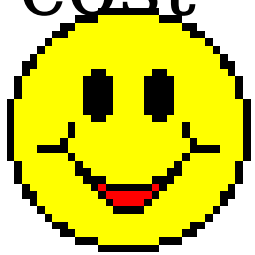
District Responsibility

Each District is responsible for preparing cost estimates and for overall total project cost





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Headquarters Cost Review

- Walla Walla District, Cost Engineering Branch

- Develop Standard Checklist
- Establish a FTP site
- Develop Standard TPCS

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Headquarters Cost Review (Continued)

- Check for completeness of the estimate
- Check for allowable / un-allowable cost
- Check for cost reasonableness
- Check price level dates
- Place cost data into standardized TPCS
- Coordinate with Districts on questions and final TPCS

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Standards - Regulations

ER 1110-1-1300

Military
ER 1110-3-1300
TM 5-800-4

Civil Works
ER 1110-2-1302
ER 1110-2-1150

EI 01D010 Construction Cost Estimates

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Clarifications

- **All 35% level estimates must be submitted**
- **All 95% level estimates must be submitted**
- **All Technical Reviews are the responsibility of each district**

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Submissions

Submission of the 35% and 95% submissions are not intended for HQ level "technical approval".

The intention is to facilitate program consistency so the corps is able to maximize our limited resources to secure our critical projects.

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Cost Submittals

- Electronic MCACES Estimate project file
- Total Project Cost Summary
- Estimate POC
- District CPSP PM

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HQ Review Checklist (Program)

- Reviewed & Approved by Cost Engineering?
- E&D Costs coordinated with Engineering?
- Construction Mgmt Costs coordinated?
- Do project notes clarify the scope?
- Features identified?
- Guard, Maintenance, Spare Parts? (not allowed)

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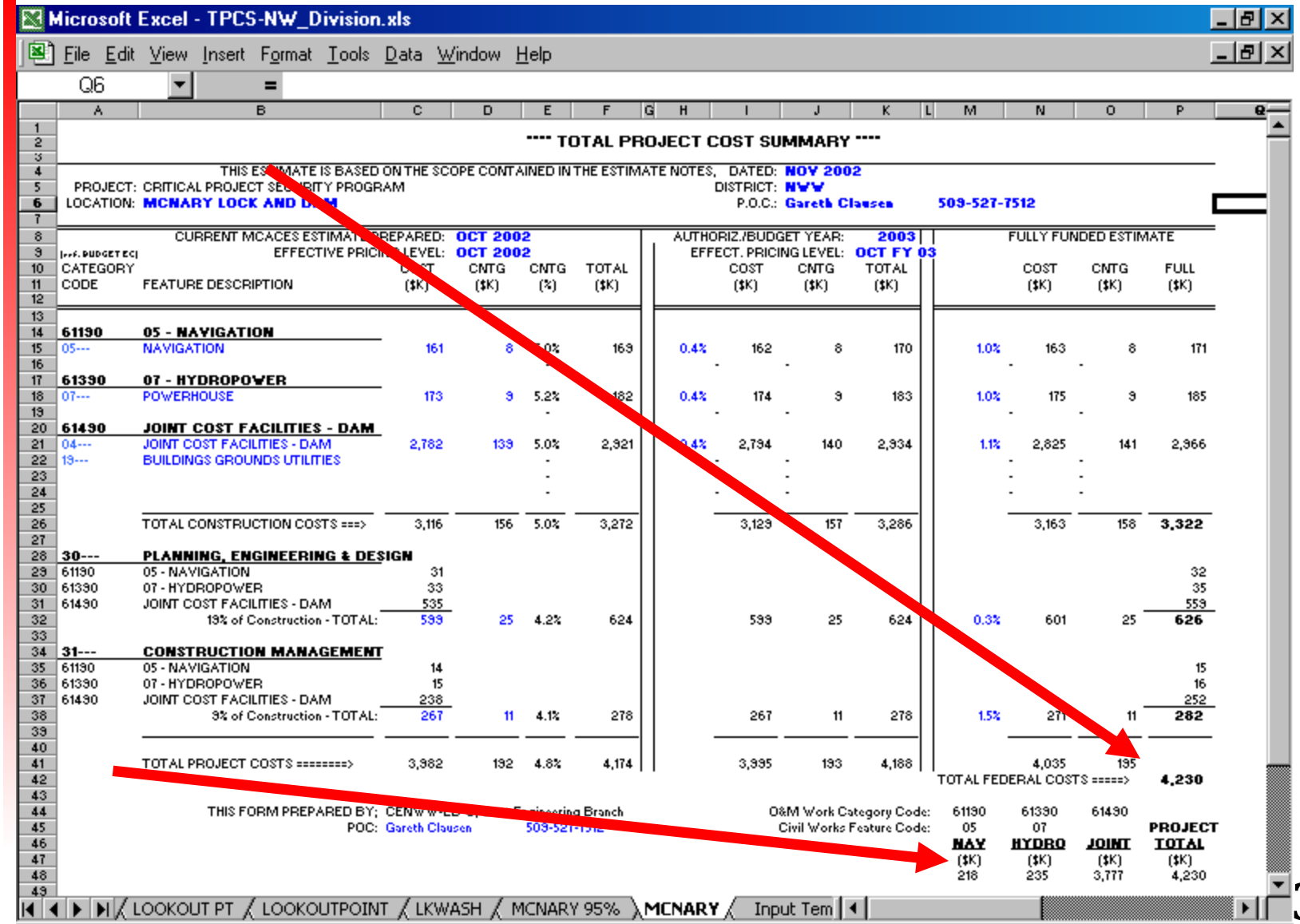
HQ Review - Total Project Cost Summary



Microsoft Excel - TPCS-NW_Division.xls

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Q6 =

****** TOTAL PROJECT COST SUMMARY ******

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE ESTIMATE NOTES, DATED: NOV 2002

PROJECT: CRITICAL PROJECT SECURITY PROGRAM DISTRICT: NWW

LOCATION: MCNARY LOCK AND DAM P.O.C.: Gareth Clausen 503-527-7512

CATEGORY CODE	FEATURE DESCRIPTION	CURRENT MCACES ESTIMATE PREPARED: OCT 2002 / EFFECTIVE PRICING LEVEL: OCT 2002 — COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	AUTHORIZ./BUDGET YEAR: 2003 / EFFECT. PRICING LEVEL: OCT FY 03 — COST ($K)	CNTG ($K)	TOTAL ($K)	FULLY FUNDED ESTIMATE — COST ($K)	CNTG ($K)	FULL ($K)
61190	**05 - NAVIGATION**										
05---	NAVIGATION	161	8	5.0%	169	0.4% 162	8	170	1.0% 163	8	171
61390	**07 - HYDROPOWER**										
07---	POWERHOUSE	173	9	5.2%	182	0.4% 174	9	183	1.0% 175	9	185
61490	**JOINT COST FACILITIES - DAM**										
04---	JOINT COST FACILITIES - DAM	2,782	139	5.0%	2,921	2,794	140	2,934	1.1% 2,825	141	2,966
13---	BUILDINGS GROUNDS UTILITIES			-							
				-							
				-							
	TOTAL CONSTRUCTION COSTS ===>	3,116	156	5.0%	3,272	3,129	157	3,286	3,163	158	**3,322**
30---	**PLANNING, ENGINEERING & DESIGN**										
61190	05 - NAVIGATION	31									32
61390	07 - HYDROPOWER	33									35
61490	JOINT COST FACILITIES - DAM	535									559
	19% of Construction - TOTAL:	599	25	4.2%	624	599	25	624	0.3% 601	25	**626**
31---	**CONSTRUCTION MANAGEMENT**										
61190	05 - NAVIGATION	14									15
61390	07 - HYDROPOWER	15									16
61490	JOINT COST FACILITIES - DAM	238									252
	3% of Construction - TOTAL:	267	11	4.1%	278	267	11	278	1.5% 271	11	**282**
	TOTAL PROJECT COSTS ========>	3,982	192	4.8%	4,174	3,395	193	4,188	4,035	195	
									TOTAL FEDERAL COSTS =====>		**4,230**

THIS FORM PREPARED BY: CENWW-EP-[illegible] Engineering Branch

POC: Gareth Clausen 503-521-7512

O&M Work Category Code:	61190	61390	61490	
Civil Works Feature Code:	05	07		PROJECT
	NAV	**HYDRO**	**JOINT**	**TOTAL**
	($K)	($K)	($K)	($K)
	218	235	3,777	4,230

LOOKOUT PT / LOOKOUTPOINT / LKWASH / MCNARY 95% / MCNARY / Input Tem

Ready NUM

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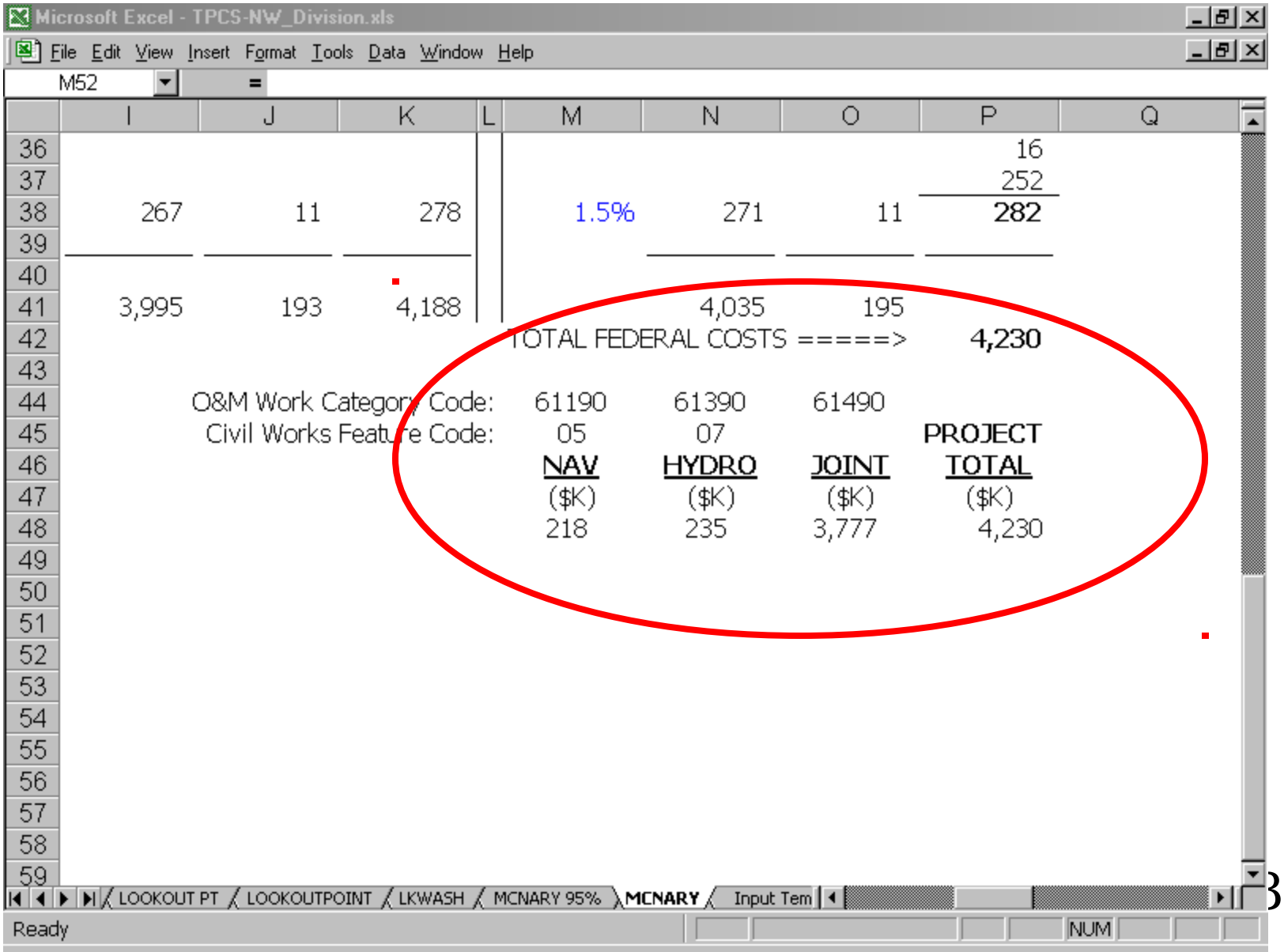
HQ Review - TPCS (Cont.)



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HQ CPSP Cost Report

27 – 35% Project Estimates

6 – Cost Engineers knew the Current Approved Estimate (based on RAM-D)

5 – Show Cost Growth

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Quality of Estimates

- Corps Prepared Generally Good
- Corps Prepared 1 – Below Standards

- Contractor or

  A/E Prepared 4 – Received,

  <u>All Below Corps Standard</u>

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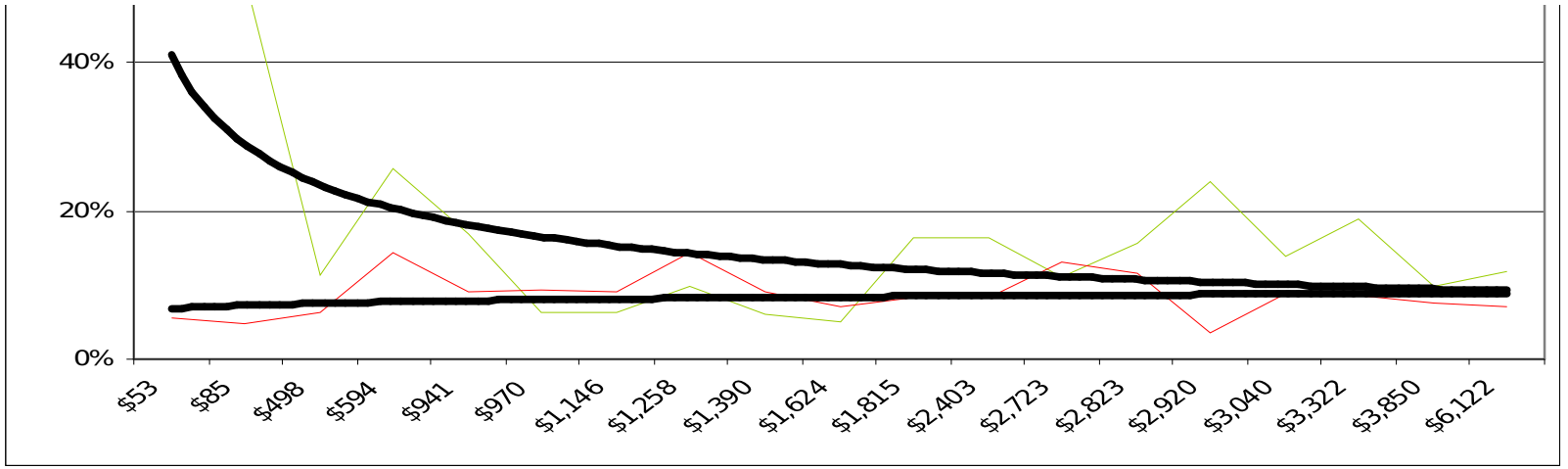
Engineering & Design, Constr Management

Average Based on Total Construction Cost

14% Engineering and Design

9% Construction Management



95% Cost Estimates

District Responsibility

ITR (Design and Cost Estimate)

Submit Approved Estimate
(Total Project Cost)
to NWW HQ Designated Cost Review

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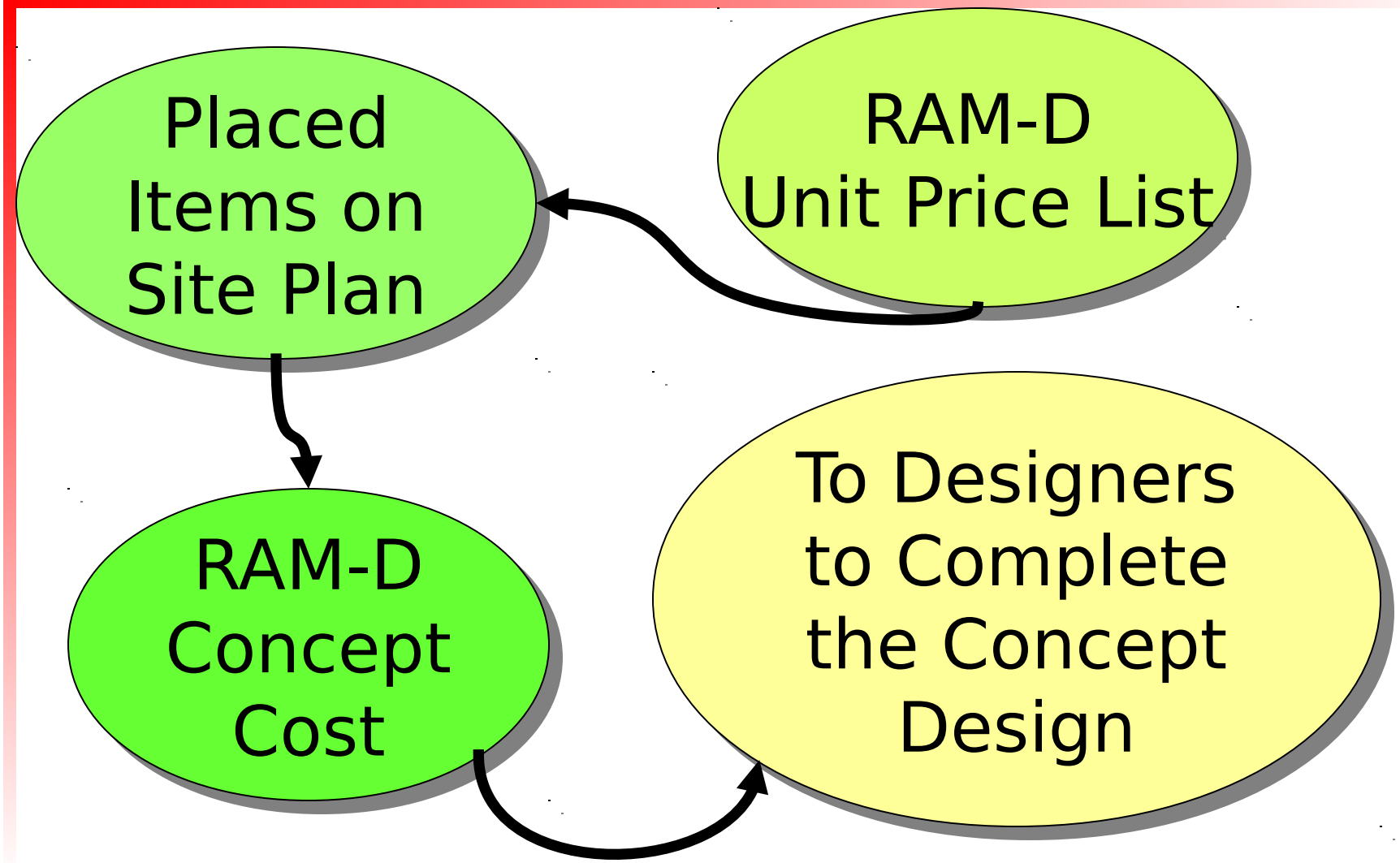
Example: Unit Price to Concept



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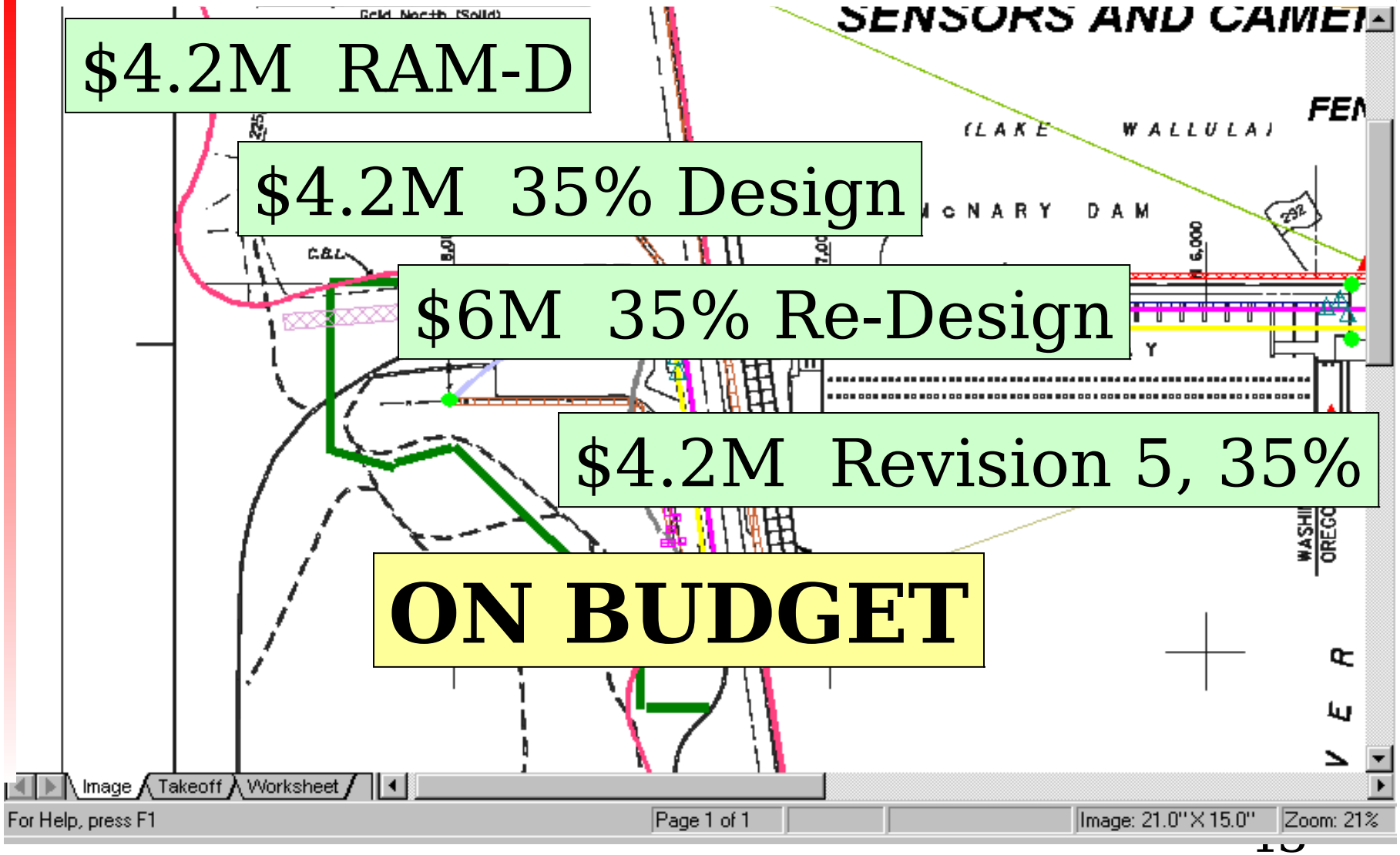
Example: Take-Off Tools - Concept to Design



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